8. Probe

Program Name: Probe.java   Input File: probe.dat

Imagine that in the year 2185, you are exploring the galaxy looking for dilithium crystals. You have a scanner that can tell you at a given sector on the planet, how many dilithium crystals are in that area. You also have two probes that can each go down to the planet and mine the crystals in a 3x3 sector area. Once a probe mines a sector, that area is depleted. Since you only have two probes, you want to maximize the amount of crystals you can get. Given the scanner data for the planet write a program that tells you the maximum number of dilithium crystals you can get with your two probes.

Input
The first line will contain the number of test cases T.
The first line of each data set is a single integer N, the side length of the square sector of the planet area you wish to scan. The next N lines each contain N space-separated integers, which are the scanner readings for that sector, indicating how many dilithium crystals are in each part of the sector.

Output
For each test case, output the maximum number of crystals you can obtain with your probes.

Constraints
```
1 <= T <= 10
3 <= N <= 20
1 <= crystals in each sector <= 10^5
```

Example Input File
```
2
5
1 1 1 1 1
1 5 1 1 1
1 1 1 1 1
1 1 1 2 1
1 1 1 1 2
6
9 9 9 1 1 1
9 9 9 1 1 1
9 9 9 8 8 1
1 1 8 8 8 1
1 1 8 8 8 1
1 1 1 1 1 1
```

Example Output to Screen
```
23
145
```

Explanation of the example
If you send your first probe to (1, 1), it mines 13 crystals from there, then your planet looks like:
```
0 0 0 1 1
0 0 0 1 1
0 0 0 1 1
1 1 1 2 1
1 1 1 1 2
```
Then if you send your last probe to (3,3), and it mines 10 crystals from there, leaving the planet as
```
0 0 0 1 1
0 0 0 1 1
0 0 0 0 0
1 1 0 0 0
1 1 0 0 0
```

And you have mined a total of 23 crystals. There are no other two-probe positions that give you more crystals, so the answer is 23. For example, (1, 2) and (3, 3) give you 22, and (1, 1) and (3, 2) gives you 21.